PROJECT STONE

MARKET RESEARCH REPORT

February 20, 1992

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I. INTRODUCTION

A. OBJECTIVE

The original objective in INPUT's work was to test the product and market assumptions behind Stone's financial projections. There were four types of activities involved:

1. To analyze and assess Stone's current products as well as its internal product plans and market projections

2. To independently conduct market research among Stone's customers, prospects and lost prospects, as well as among customers of other CASE products

3. To compare the results of the market research with Stone's own market and product assessments

4. To assess the opportunities for coordination between Stone and Softlab, involving both products and market issues.

The third objective was modified in the course of the projects as it become clear that Stone had few market assessments and those that it did have, short term forecasts, were deficient.

Objectives one and four were addressed in large part in the course of meetings in Atlanta and Munich with BMW, Softlab and KPMG.

The written report will primarily address INPUT's research findings from Objective 2. These findings were reviewed with BMW staff in overhead transparency format in Munich on February 14-16, 1992.

B. RESEARCH METHODOLOGY

1. Original Plan

The original research plan was to segment interview subjects as shown in Exhibit I-1. This would allow for a rounded view of Stone:

- Attitudes and purchasing plan of current customers

- Verification of identified prospects

- An understanding as to why prospects decided not to buy from Stone.

Interviews were targeted to begin January 10.

2. Revised Plan

However, the interview research could not proceed along the original lines because:

- Stone requested that U.S. prospects not be contacted by INPUT.

- Stone stated that it had no data on lost prospects.

- Stone was unable to supply any contact information (i.e., name and telephone numbers) on its European customers.

The revised objectives are illustrated in Exhibit I-2.

Stone did ultimately provide information on U.S. and European customers. However, this was delayed and U.S. research was not able to begin until January 27 and European research until January 28. (Interviews were conducted through February 10, closing off in order to present results in Munich.)

- Stone had no centralized data base of U.S. customers: all contact was obtained by a Stone executive calling individual account representatives. Many contact names were never obtained.

- According to Stone, the only European customer information available in Atlanta were customers' purchasing documents which contained only the company name. In large multi-divisional organizations, there was no indication as to which organizational unit was involved; there were no contact names available. Ultimately, Stone supplied INPUT with approximately 45 European company names who were supposed to be customers. Even this list was faulty, for example:

  -- Only two out of seven German companies contacted from the Stone list had IEW or ADW

  -- None of the five French companies contacted had IEW or ADW

INPUT supplemented Stone's lists with commercial lists of Stone customers.

- The commercial lists for the U.S. were reasonably accurate, although these lists were basically supplemental to the Stone-provided lists.

- The commercial lists for Europe were incomplete or obsolete, resulting in many unproductive contacts.

Due to Stone's inability and unwillingness to supply information, the research process was roughly half as efficient as anticipated.

3. Conduct of the Research

INPUT's research targets were persons who were knowledgeable concerning the CASE plans and activity of their enterprise. In larger organization (and/or those with mature CASE activities) these tended to be specialist staff. However, in many instances the interviewees were from senior IS management. The profile of respondents was very similar in the U.S. and Europe (Exhibit I-3).

Generally, respondents were well-informed, frank and forthcoming. Respondents were promised anonymity and the sponsor of the study was not revealed.

INPUT interviewed 96 organizations in the U.S. and Europe. As noted a number of respondents, especially in Europe, were apparently not Stone customers (or at least the division or site contacted was not). See Exhibit I-4 for the distribution between categories.

However, all companies interviewed provided valuable information for assessing market size and growth, and future needs.

INPUT has been able to take advantage of prior research and analysis it has performed. Research directly utilized includes:

- 1991 research on Stone and Texas Instruments customers (Certain of these findings are incorporated here.)
- 1991 research which identified barriers to CASE use in the U.S. market

Exhibit I-1

STONE MARKET RESEARCH: ORIGINAL RESEARCH PLAN

	U.S.	Europe
New customers	X	X
1991 lost business	X	X
Current prospects	X	X
Major country markets		X

Exhibit I-2

STONE MARKET RESEARCH: REVISED RESEARCH PLAN

	U.S.	Europe
Existing customers	X	X
New customers	X	X
1991 lost business		
Current prospects		
Major country markets		

Exhibit I-3

RESPONDENT PROFILE

	U.S.	Europe
Senior Information Systems Management	21%	18%
Software Development of IS Planning Managers	47%	53%
CASE Technical Staff	32%	29%
	100%	100%

Exhibit I-4

INTERVIEWS

	U.S.	Europe	Total
ADW/IEW Installations	45	17	62
ADW/IEW Prospects	2	7	9
No ADW/IEW	7	18	25
TOTAL	54	42	96

II. CUSTOMER SATISFACTION

A. U.S. CUSTOMERS

Generally speaking, U.S. customers in this current survey are satisfied with Stone. As the left column in Exhibit II-1 shows, Stone's overall rating is 3.7 on a scale of 5, with Stone's reputation given a rating of 4.2. Stone also received very good ratings in many product related areas as well as on the effectiveness of its sales process. The lowest ratings were in areas where Stone was not active (consulting) or where higher ratings, were not to be expected (conformance to other standards) or were not desirable from a business standpoint (price).

These ratings were down somewhat from a similar study conducted in July 1991 (middle column in Exhibit II-1).

- "Reputation" may have risen slightly
- "Long term viability" was down marginally, almost certainly reflecting First Quarter problems
- "Current product features/functions" was down markedly, reflecting the product release and withdrawal problems in 1991
- "Training" and "Consulting/implementation assistance" both fell marginally, probably as a result of the impact of staff cutbacks on support.

All in all, Stone's U.S. ratings are good and representative of a stable company which holds its customers' confidence.

For comparison, the right column of Exhibit II-1 shows results of a Texas Instruments survey made at the same time as the 1991 Stone survey. TI's ratings are extremely positive. However, two factors should be kept in mind when comparing the two companies:

- The sample from which the TI customers were contacted may have been somewhat more positively disposed to TI than the typical customer.
- More importantly, TI customers in general are more committed to their product than the typical Stone customer.
  - -- The average TI customer has made a higher dollar investment.
  - -- Equally important, TI customers buy into a "way of life". Some observers compare it to a religious commitment.

B. EUROPEAN CUSTOMERS

European customer satisfaction in most product-related matters is reasonably close to that found in the U.S. (Exhibit II-2).

The U.S. and European ratings for "conformance to other standards" were substantially the same. However, this has more of a negative impact in Europe due to the existence of national methodology standards.

The situation is strikingly different for vendor-related issues:

- The overall rating of Stone in Europe of 2.8 is far below the 3.7 in the U.S.
- "Reputation" and "references" shows almost as large a gap.
- "Effectiveness of sales process" is also far below that of U.S. organization.
- Interestingly enough, "consulting and implementation assistance" also ranks low; this is rather unexpected, given E & Y's position as a consulting organization.

From this data, INPUT concludes that E & Y has not been the most effective representative for Stone in Europe. In fact E & Y's performance may undermine Stone's long term position in Europe. This is borne out by the fact that five out of 17 (29%) of Stone's European clients volunteered that they were abandoning the Stone product. (INPUT received no such comments from its larger sample of U.S. customers.) Statements volunteered are shown in Exhibit II-3.

INPUT's research was not designed to uncover all the reasons for this level of dissatisfaction with E & Y. However, INPUT believes that the following factors are involved:

- Fewer European customers than U.S. customers appear to have converted from IEW to ADW. This would be both a cause and effect of customer dissatisfaction.
- The E & Y merger may have unsettled E & Y's European consulting and product organizations. (These were many unsettling effects in the U.S., for example.)
- Most importantly, E & Y may be suffering from "short term-ism" as a result of Stone's 1991 discussion to take over distribution. The 1993 expiration date of the distribution agreement would not encourage long term thinking. This attitude would emphasize immediate sales over support and other longer-term customer development efforts.

C. CUSTOMER SATISFACTION SUMMARY

Product satisfaction is good among both customer sets. In terms of general company image, Stone is much better positioned in the U.S. than in Europe. Exhibit II-4 summarizes these positions.

Stone's overall European position is affected by the fact that for many customers their perceived vendor is primarily E&Y, since that is the vendor with which virtually all contacts are made.

A further finding is that the average length of the CASE product selection process is between eight and nine months in both U.S. and Europe (Exhibit II-5).

Exhibit II-1

U.S. RATINGS

	STONE 1992	STONE 1991	TI 1991
OVERALL RATING	3.7	n/a	n/a
SPECIFIC FACTORS			
Vendor Reputation	4.2	3.9	4.5
Product integration (future)	3.9	4.4	4.9
Future product features/ functions	3.9	n/a	n/a
Conformance to AD/Cycle	3.8	3.4	3.1
Effectiveness of sales process	3.8	n/a	n/a
Long term viability of vendor	3.7	4.1	4.5
Current product features/ functions	3.6	4.4	4.5
Ease of use	3.5	3.7	3.8
Methodology support by product	3.4	3.4	4.6
Product integration (current)	3.4	3.9	4.5
References from current users	3.4	3.6	4.6
Ease of learning product	3.3	3.6	3.4
Training offered by vendor	3.3	3.7	4.1
Price	3.0	3.2	2.7
Consulting/implementation assistance supplied by product vendor	2.8	3.2	4.0
Consulting/implementation assistance available from other vendors	2.5	2.7	3.3
Conformance to other standards	2.5	n/a	n/a

1 = Poor 5 = Excellent

(Meaningful differences are those 0.4 or larger.)

Exhibit II-2

STONE RATINGS

	U.S. 1992	U.S. 1991	EUROPE 1992
OVERALL RATING	3.7	n/a	2.8
SPECIFIC FACTORS			
Vendor Reputation	4.2	3.9	3.4
Product integration (future)	3.9	4.4	3.6
Future product features/ functions	3.9	n/a	3.7
Conformance to AD/Cycle	3.8	3.4	3.6
Effectiveness of sales process	3.8	n/a	2.6
Long term viability of vendor	3.7	4.1	3.8
Current product features/ functions	3.6	4.4	3.4
Ease of use	3.5	3.7	4.0
Methodology support by product	3.4	3.4	3.5
Product integration (current)	3.4	3.9	3.0
References from current users	3.4	3.6	2.5
Ease of learning product	3.3	3.6	3.9
Training offered by vendor	3.3	3.7	3.5
Price	3.0	3.2	2.7
Consulting/implementation assistance supplied by product vendor	2.8	3.2	2.4
Consulting/implementation assistance available from other vendors	2.5	2.7	2.4
Conformance to other standards	2.5	n/a	2.6

1 = Poor 5 = Excellent

Exhibit II-3

EUROPEAN QUALITATIVE ASSESSMENTS

"Not at all pleased with present tools and with Ernst & Young."

"Could not provide requirements for total team environment."

"Technically correct, but could not use it."

"Too complicated, will leave it."

"Does not meet full requirements."

Exhibit II-4

STONE: CUSTOMER SATISFACTION SUMMARY

	U.S.	Europe
Overall Rating	Very good	Fair
Vendor Reputation	Excellent	Good
References	Good	Fair
Sales Process	Very Good	Fair
Product characteristics (Summary)	Good/Very Good	Good/Very Good

Exhibit II-5

AVERAGE LENGTH OF CASE PRODUCT SELECTION PROCESS

	Months
U.S	8.4
Europe	8.1

III. Customer Requirements

Customer requirements are made up of two components:

- Customers' assessments of their current experience and the impact which that has on their plans
- Potential technological changes which could influence customer requirements (and product demand)

A. CURRENT CASE EXPERIENCE

The extent to which customers' rate their CASE experience is to a large extent a function of expectations and objectives. Exhibit III-1 shows the objectives of Stone customers. The major long term objectives are

- Quality
- Speed of applications development
- Productivity
- Maintenance improvement

In the short term there is a lower level of expectation. This is a desirable situation for a CASE product vendor making initial sales, since neither the vendor nor the product have to satisfy rigorous expectations. However, this type of two-level expectation can create sales problems if expectations are not met.

The two major CASE product deficiencies noted by U.S. customers of Stone are the lack of integration and "learning curve" issues. "Learning curve" relates to the key issue of how extract value from the product rather than merely learning to use the product's technical features.

The learning curve issue is one that INPUT has identified in its other CASE research. Several of these findings will be reviewed below because INPUT believes they are pertinent to this analysis.

In identifying problems which delayed the acceptance of CASE, INPUT found a mixture of technology and "soft" problems (Exhibit III-3). In fact, 80% of respondents identified at least one serious "soft" problem; many of these problems are interconnected (Exhibit III-4). These "soft" problems are generally connected with an organization's readiness (or, more usually, unreadiness) to utilize CASE effectively. Exhibit III-5 summarizes INPUT's assessment of CASE organizational readiness in the U.S. INPUT believes that the situation in Europe is generally similar, although Europe may be somewhat ahead in a few specific areas (e.g., methodologies).

B. TECHNOLOGY AND ITS IMPACT ON FUTURE REQUIREMENTS

CASE, like any technology-driven market, is one where demand is heavily influenced by product improvements. The survey asked both U.S. and European respondents to rate the importance of several CASE initiatives:

- Client/server, as both a development and target platform
- Integrated re-engineering
- Multiple hardware platform support
- Object-oriented design

As shown in Exhibit III-6, all of these except object-oriented design received quite high scores in the U.S. and, except for integrated re-engineering, almost as high scores in Europe. There are both positive and negative aspects to this:

- Between Stone and Softlab, there are considerable efforts going on to meet these general needs
- However, depending on the strengths of these expectations (and the experience with current products), these expectations could delay the purchase of current products.

Exhibit III-1

CASE OBJECTIVES: U.S. STONE CUSTOMERS

Objective	Short Term	Long Term
Improve quality	37%	37%
Increase speed of completion	14%	26%
Improve productivity	11%	26%
Improve maintenance	9%	23%
Integration/Standards	11%	9%
Cost Savings	6%	6%
Improve documentation	14%	9%
Other (e.g., improve process, education, modeling)	11%	9%
None	20%	0%

Multiple objectives, therefore, percentages total more than 100%.

Note: Open-ended question; answers coded

Exhibit III-2

CASE PRODUCT DEFICIENCIES

(U.S. Stone Customers)

Deficiency	U.S.
Integration	29%
"Learning curve"	26%
Multi-user, client/server	11%
Portability	9%
Re-engineering	9%
General immaturity	6%
Other Technical (e.g. code generators, object-oriented, modeling, graphics)	23%
None Cited	6%
	100%

Note: Open-ended question; coded

Exhibit III-3

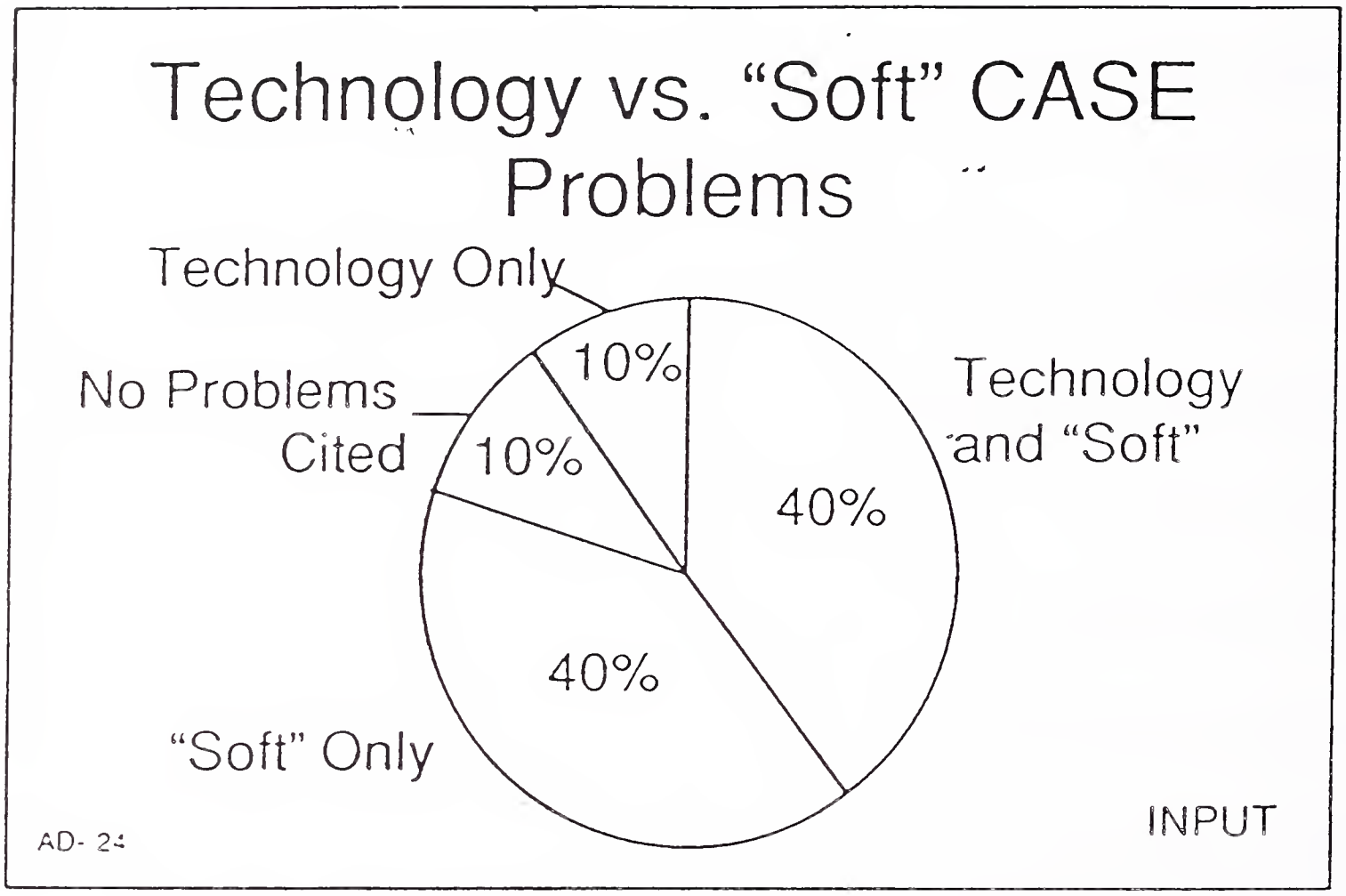


Exhibit III-4

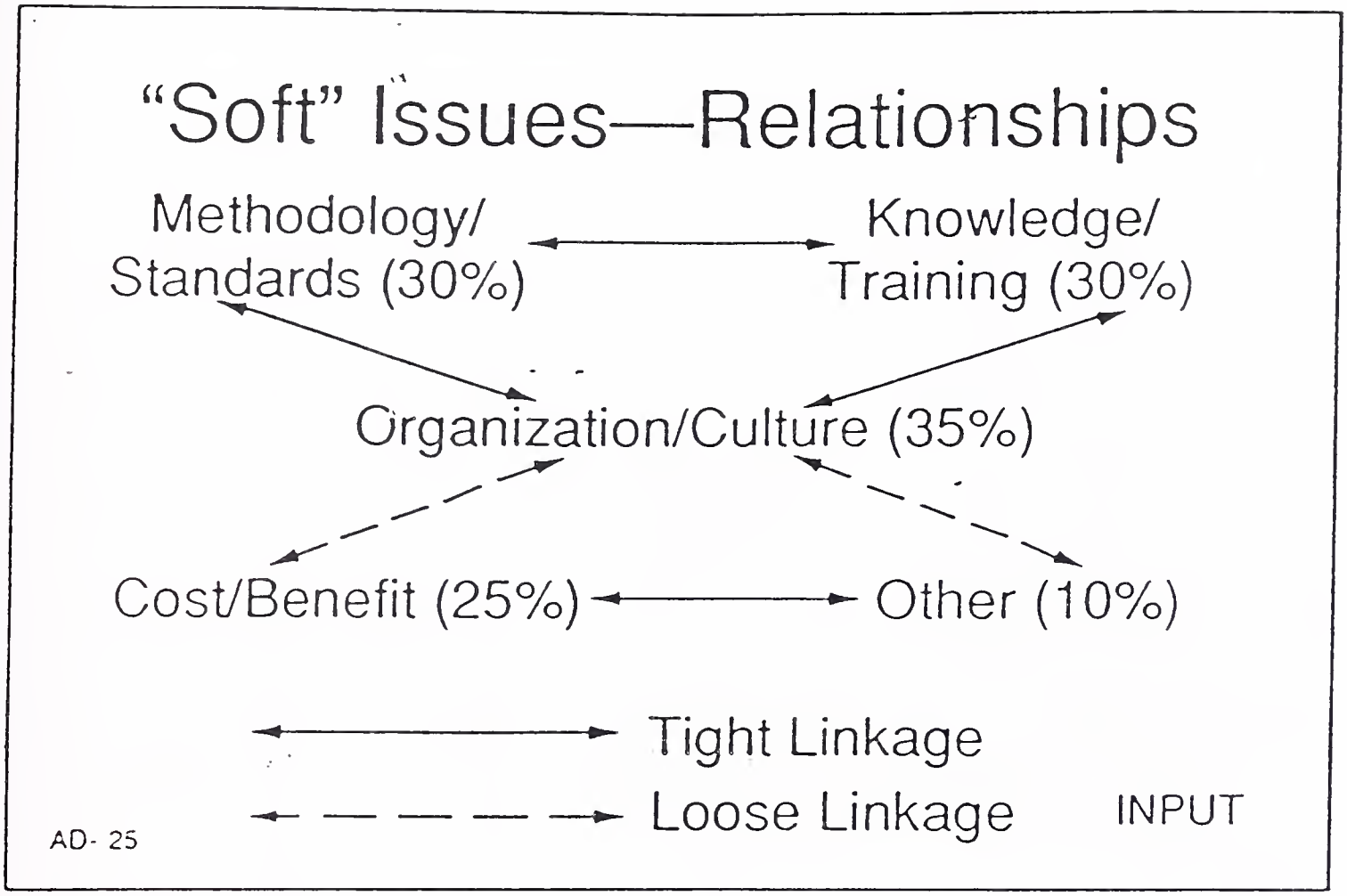


Exhibit III-5

CASE Organizational Readiness Factors: 1991 and 1993

Factor	1991	1993	
		Worst	Best
Culture/organization changes			
• Understanding of general issues	C-	C	B+
• Specific environment issues	C-	C	A
Methodologies			
• Evaluation criteria	C	C	A
• Integration into specific environment	C	C	B+
Measurement			
• Definition of success	F	D	C+
• Conducting measurements	D-	D-	B-
Implementation			
• Understanding success/ failure factors	D	C-	B+
• Planning	C-	C-	B+
• Applying success factors to specific environment	D	C-	B+
IS-User Relationships			
• General requirements	C-	C	B+
• Specific restructuring	C	C	B+
Training			
• Understanding general needs	C-	C+	B+
• Developing methodologies	D	D	A

Source: INPUT Assessment

Exhibit III-6

RATINGS OF SPECIFIC INITIATIVES

	U.S.	Europe
Client/Server: Development Platform	4.1	3.6
Client/Server: Target Platform	4.0	3.7
Integrated Re-engineering	3.9	2.6
Multiple Hardware Platform Support	3.8	3.7
Object-oriented Design	3.6	3.1

1 = low importance 5 = high importance

IV. PRODUCT EXPENDITURES PLANNED BY STONE CUSTOMERS

A. OVERVIEW

As noted in Chapter I, INPUT originally planned to interview current customers, identified Stone prospects as well as lost prospects in order to thoroughly understand the future direction of Stone product purchases. For the reasons explained earlier, INPUT had to limit itself to current customers. INPUT believes that this group does represent a very large part of future purchases because:

- Most large customers started developed incrementally.
- Stone has such a large customer bases that merely from a probability standpoint most future customers will have been prior customers.
- The average U.S. customer has about $100,000 worth of product installed; the scope for expansion is high.

Exhibit IV-1 shows this situation graphically.

For both the U.S. and Europe the same methodology was employed to calculate both past and future spending plans. The key quantitative measures used are:

- Annualized CASE purchases to date
- Planned annualized CASE purchases
- Percent change in CASE expenditures

The derivation of these measures is shown in Exhibit IV-2.

The installed base in the U.S. and Europe is shown in Exhibits IV-3 and IV-4. The installed base is divided into three size groups for analytic purposes. There are some differences in the samples:

- European customers with more than $500,000 of product installed are somewhat large than those in the U.S. On the other hand, this sized customer has a higher annualized spending to date, reflecting Stone's high rate of sales in the past two years.

- In the smaller customers (under $150,000) the U.S. customers are larger than those in Europe and have much higher annualized purchases; again, this reflects Stone's very effective sales activities in the U.S.

- An important item which should be kept in mind when looking at a subsequent analysis of this data is the relatively high number of unknowns in the European data. This did not generally reflect unwillingness to provide the financial data, but an inability to do so. Assuming that these unknowns have similar characteristics to the rest of the sample, this is only a minor problem.

B. SPENDING PLANS

The direction of future CASE product spending plans of respondents in the U.S. and Europe are strikingly different, as shown in Exhibit IV-5:

- Only one-third of U.S. companies plan to increase their spending over the next two years, compared to twice that number in Europe.

- Almost half the companies in the U.S. plan for a decrease in their level of spending, as compared to one-third in Europe.

In quantifying these spending plans (Exhibit IV-6), the situation in the U.S. shows a striking change to Stone's experience of the past several years:

- In the U.S. only the smallest installed base group shows a net increase, a reasonable 35% annual growth rate. The average spending per site per year for this group is expected to be about $100,000.

- However, among the largest current customers, the annualized rate of spending is planned to decrease by almost 90% -- these companies would be on a virtual holding pattern.

- The middle group in the U.S. expects flat to down spending and annual purchases of about $100,000 annually.

The situation in Europe is quite different (Exhibit IV-7):

- All groups expect sizable increases in their rate of purchases

- The largest rate of increase is expected in the largest accounts.

There are several facts which should be balanced against this very buoyant situation in Europe:

- There are both Stone and non-Stone customers and products in this group, although there do not appear to be material differences in their spending plans.

- More importantly, there is the previously mentioned dissatisfaction with Stone/E & Y. There is no guarantee that current Stone customers will remain with Stone. (Unlike the situation in the U.S. where what purchasing that was planned would generally remain with Stone.)

- There is also a legitimate question whether the E & Y sales force will be able to get Stone's "fair share" of this spending, given the low rating of E & Y's sales process.

However, even with these caveats, Stone's position in Europe looks more favorable than its position in the U.S.

C. EXPLANATIONS FOR U.S. PLANNED SPENDING

1. U.S. Recession

Stone has previously volunteered the explanation for the fall-off in its rate of sales growth as being primarily a result of the U.S. recession. Because of that, INPUT specifically asked U.S. respondents about the impact of the recession on their spending plans. Stone perception is accurate in the sense that over half of those interviewed said that the recession had negatively affected their CASE plans.

However, on further analysis, the effect of the recession appears to be nominal.

- As shown in Exhibit IV-8, almost half of those who see their CASE spending affected by the recession are still planning to spend more; this is twice the proportion who do not see the recession impacting their CASE plans!

- Looking at those who do not see the recession having an impact of their plans, over half of these companies are planning to reduce the rate of their CASE spending.

Perhaps, though, the recession can explain the tremendous fall-off in the planned spending of the larger sites. However, when the additional dimension of site size was added (Exhibit IV-9), the recession still did not provide an answer to spending changes:

- Two-thirds of the large sites interviewed saw no impact of the recession on their spending plans.

- Five of the seven large companies planning to cut CASE spending were companies that did not see an impact of the recession on their CASE purchases.

There are several possible explanations for Stone offering the recession as an explanation in good faith:

- Customer often find it easier to say "no", by blaming conditions beyond their control.

- Salespeople are often unwilling to probe for more fundamental reasons. Some in the sales force may themselves believe that their problems are caused by the recession and pass this information up through the organization.

In INPUT's view there are other causes operating here rather than just the external economic situation.

2. Structural Impediments to Medium-Term Buying in the U.S.

As indicated earlier, some U.S. companies have reached the limits of their ability to absorb additional CASE products. This appears to be a problem for many Stone customers. There are two dimensions to this issue:

- Limitations on CASE Product Capabilities - These limitations are shared to a greater or lesser degree by all CASE products and include:

  -- Limited integration of forward engineering functions
  -- Almost non-existent integration of re-engineering functions

  -- The lack of multi-user products (sometimes called client/server products)

- Limitations of IS Organizations' Capabilities to make use of case technology ("Organizational Readiness") - Even the most capable products can not be used in a vacuum. There is an inter-related set of "soft" issues that needs to be addressed. These issues include, but are not limited to:

-- Metrics and cost/benefit analysis
-- Organizational culture change (including end user involvement and IS personnel realignment
-- Methodology and standards
-- Data modeling, organizational templates and business process re-engineering
-- Education and training

For further analysis, please see Appendix 2.

These two sets of limitations are related from a functional standpoint. From a market analysis standpoint these two factors are independent:

- Even if a current customer of Stone is not receiving maximum benefits from current products because of its own organizational limitations, it will still receive benefits from improved products.

- Other customers may improve productivity or quality by making improvements in the "soft" issues referred to above. If these improvements are large enough, then the customer could purchase more product, even if the product has flaws

Stone's problem is that its core products are perceived as "good" products, but ones that need improvements before the products themselves can bring about the significant operational improvements which customers are expecting.

Except for education, Stone is not itself providing services which can improve customers' "organizational readiness" for CASE. This is the opposite of the approach which has been used by Texas Instruments, which has supplied a full set of consulting services to support its products.

Consequently, Stone has been dependent on its customers or third party consulting organizations for ensuring that Stone's products are used effectively. This is a slow process at best and may be the chief reason for Stone's product sales slowdown in the U.S.

Note: The higher growth rates found in Europe can be explained in two ways:

- Many European customers are more "engineering oriented" and are more self-sufficient in terms of making the products work themselves.

- At least as important is the fact that the European market is lagging the U.S. market in terms of the penetration of Stone's products: only about one quarter as much product has been sold in Europe as in the U.S. and the average number of units per account is even lower than in the U.S. This argues that if U.S.-type problems were to occur , these problems are still at least several years away in Europe.

Exhibit IV-1

Identified prospects
(in three-month pipeline report)

Exhibit IV-2

KEY QUANTITATIVE MEASURES

(I) Annualized CASE purchases to date

(Amount spent to date/years installed)

(II) Planned CASE annualized purchases

(Planned spending in next two years/2)

(III) Percent change in CASE expenditures

(I/II)

Exhibit IV-3

STONE SAMPLE: U.S.

Installed Base Distribution	Number In Sample	Median Installed Base	Annualized Purchases To Date
$500K & larger	10 (29%)	$700K	$445K
$151K-$499K	10 (29%)	$250K	$133K
$150K & under	11 (31%)	$90K	$74K
Unknown	4 (11%)		
TOTAL	35 (100%)		

Note: 10 additional interviews were completed after the above analysis was completed. This additional data was compared to that above and found to be substantially similar.

Exhibit IV-4

STONE SAMPLE: EUROPE

Installed Base Distribution	Number In Sample	Median Installed Base	Annualized Purchases To Date
$500K & larger	8 (19%)	$1000K	$300K
$151K-$499K	8 (19%)	$200K	$90K
$150K & under	10 (24%)	$45K	$20K
Unknown	16 (38%)		
TOTAL	42 (100%)		

Note: Includes non-Stone product expenditures (past, future)

Exhibit IV-5

YEAR-TO-YEAR CASE SPENDING PLANS: U.S. AND EUROPE

Year-to-Year Spending	Percent of Respondents U.S.	Europe
Up	34%	63%
No change	21%	5%
Down	45%	32%
TOTAL	100%	100%

Exhibit IV-6

PLANNED ANNUAL PURCHASES: NEXT TWO YEARS (U.S.)

Installed Base Group	Annualized Purchases To Date (Median)	Planned Annualized Purchases: Next Two Years (Median)	Percent Change
$500K & larger	$445K	$50K	-89%
$151K - $999K	$133K	$112K	-16%
$150K & under	$74K	$100K	+35%

Exhibit IV-7

PLANNED ANNUAL PURCHASES: NEXT TWO YEARS (EUROPE)

Installed Base Group	Annualized Purchases To Date (Median)	Planned Annualized Purchases: Next Two Years (Median)	Percent Change
$500K & larger	$300K	$1,200K	+300%
$151K - $999K	$90K	$140K	+56%
$150K & under	$20K	$40K	+100%

Exhibit IV-8

IMPACT OF U.S. RECESSION ON STONE CUSTOMERS' CASE PLANS

Year-to-Year Spending	CASE Plans Slowed	No Effect on CASE Plans	TOTAL
Up	24%	10%	34%
No Change	14%	7%	21%
Down	17%	28%	45%
TOTAL	55%	45%	100%

Exhibit IV-9

IMPACT OF U.S. RECESSION ON STONE CUSTOMERS' CASE PLANS

Number of Companies by Installation Size*

Year-to-Year Spending	Case Plans Slowed				No Effect on Case Plans				Total
	S	M	L	T	S	M	L	T	
Up	3	3	1	7	2	1	0	3	10
No Change	3	1	0	4	0	1	1	2	6
Down	1	2	2	5	1	2	5	8	13
TOTAL	7	6	3	16	3	4	6	13	29

* S = Small = $150K & under
M = Medium = $151K - $499K
L = Large = Over $500K
T = Total

V. SUMMARY OF FINDINGS AND CONCLUSIONS

The Stone product has been well-received in both U.S. and Europe.

The survey uncovered problems in Europe in customers' relations with Ernst & Young.

The most important finding is that Stone's U.S. market appears to be moving to a different level of need. This new level of need would place high value on a more fully integrated set of products that are in a multi-user environment.

The Stone/Softlab combination could be very responsive to customer needs of the 1990s:

- Softlab's work on providing a multi-user, integrated technical platform would be quite important for maintaining Stone's position of U.S. market leadership. Softlab appears to be considerably ahead of Stone in this technology.

- Stone and Softlab could together take over E & Y's European distribution network as a foundation for addressing the problems uncovered in the market research.

Appendix 1

PLATFORMS (U.S.)

	OS/2	AIX/UNIX	MVS	AS/400	"IBM"
Client/Server (Development Platform)	6	3	1	1	4
Client/Server (Target Platform)	8	4	2	1	2
Multiple Hardware Platform	5	11	3	3	7

Appendix 2:

NEAR-TERM ISSUES (1991-1993) AFFECTING CASE MARKET GROWTH (Extracts from "The Future of CASE: 1991-1996)

There are two sets of near-term issues affecting market growth:

- Technology-related issues
- The "soft" issues (described in Exhibit III-10), which affect the extent to which an organization is ready ("organizational readiness") to absorb and make productive use of CASE.

Based on INPUT's research, these organizational readiness issues are even more important than the technology issues. Exhibit V-2 contains INPUT's assessment of a number of the organizational readiness issues for both 1991 and 1993 (a best- and worst-case assessment is provided for 1993).

- The sum of the "grades" for 1991 reflects near failure. This puts into perspective the earlier findings on the overall relative ineffectiveness of CASE (e.g., Exhibit III-3).
- The sheer number of such factors needing improvement will make progress relatively difficult; yet all the factors are important, and it is difficult to make a case that some can be ignored at the expense of others.
- The worst-case total for 1993 shows little improvement over 1991.
- The best-case total would virtually guarantee CASE success in a wide variety of settings.

INPUT concludes that in the near term, organizational readiness may serve as the most serious constraint to CASE progress.

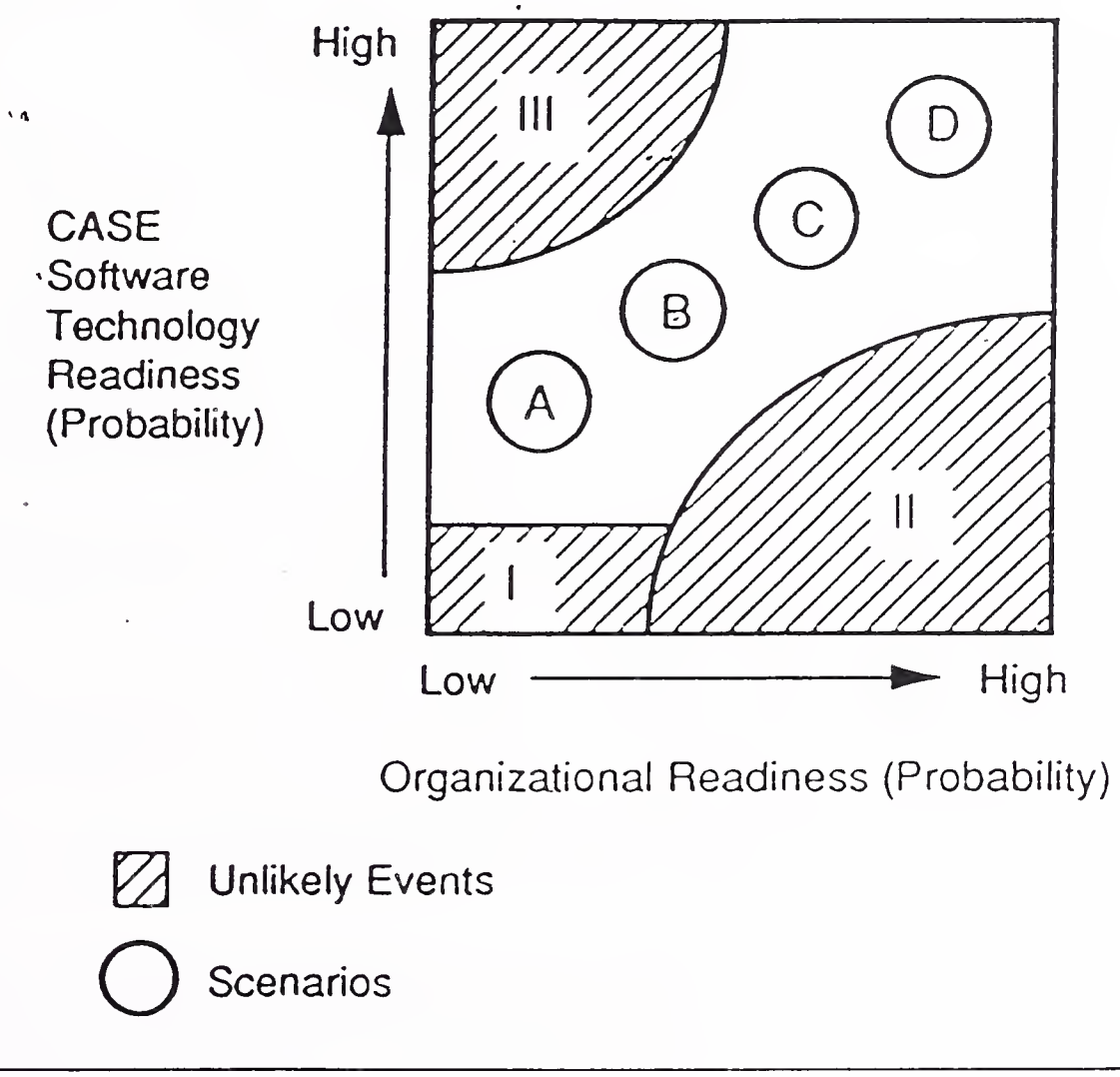
If AD/Cycle is taken as a surrogate for overall technical progress, then near-term CASE technical issues are not serious barriers to progress (for a summary, see Exhibit IV-16).

Exhibit V-3 describes four possible near-term scenarios for CASE growth and acceptance (i.e., success). Other possibilities have not been analyzed in depth since they represent, in INPUT's opinion, combinations of very unlikely events:

- CASE software technology standing by itself is already beyond the low probability of success stage (Region I).
- It is quite unlikely that organizational readiness will be at a higher stage of development relative to CASE technology (Region II).

EXHIBIT V-3

Near-Term (1991-1993) CASE Success Determinants: Alternate Scenarios



- High technical success would almost certainly have a "drag-along" effect on organizational readiness. For example, CASE tools that were relatively easy to use, incorporated self-training features, and used proven templates would be accepted in more organizations sooner. The effect would be that high technological readiness would not be associated with low organizational readiness (Region III).

Exhibit V-4 spells out the individual scenarios and assigns a probability with an accompanying rationale.

- INPUT has been impressed with the recent progress made in the underlying CASE technology generally (i.e., not limited to AD/Cycle). These technology improvements will encourage user organizations to take CASE more seriously. Current CASE technology will help establish wider CASE principles in customer organizations (Scenario B).

EXHIBIT V-4

Evaluation of Near-Term CASE Success Scenarios

Success Combination				Rationale
Scenario	Technology	Organizational	Probability	
A	Medium/ Low	Low	.25	Technology success is likely to be at least medium/high
B	Medium/ High	Medium	.50	This level of technical success is quite likely; some organizational readiness "drag-along" by CASE technology likely
C	High	Medium/ High	.15	Organizational readiness will be a bottleneck
D	High	High	.10	Organizational readiness will be a severe bottleneck

- A less attractive combination is shown in Scenario A, where neither technical progress nor organizational readiness are as good. There is even a chance that Scenario B could turn into Scenario A—i.e., negative experiences of early users could reduce the number of organizations that believed they were ready for CASE.

- Scenarios C and D are very positive ones: the technology makes widely perceived breakthroughs and increases organizational readiness. INPUT believes that it will be difficult for very many user organizations to make their own unassisted breakthroughs. So far, there are very few outside organizations (consultants and vendors) that have focused on offering support services to help make breakthroughs.

2. Medium-Term Issues (1994-1996)

In the medium term, the organizational readiness factors will continue to be important.

- The near-term progress (or lack of progress) will heavily influence the impact in the 1994-1996 period.

About INPUT

INPUT provides planning information, analysis, and recommendations for the information technology industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Subscription services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services. INPUT specializes in the software and services industry which includes software products, systems operations, processing services, network services, systems integration, professional services, turnkey systems, and customer services. Particular areas of expertise include CASE analysis, information systems planning, and outsourcing.

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

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